

## REMARKS

### Status of the Claims

Claims 1-15 are pending.

### Issues Under 35 U.S.C. § 102

Claims 1, 2, 6-10 and 12 are rejected under 35 U.S.C. § 102 as being allegedly anticipated over Burgess (US 2003/0051795). This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

Burgess discloses a winding method and apparatus for fabrication of composite material products. However, Burgess fails to disclose or suggest, among other things, the application of a resin impregnated filament onto a elongate mandrel.

Contrary to the disclosure of Burgess, the Office Action states that “Burgess taught that it was known at the time of the invention was made to apply resin impregnated filaments upon a mandrel...” See page 2. Applicants respectfully submit that this interpretation of Burgess is incorrect.

On the other hand, Burgess discloses an analogous method to that presented by Elliot as described in the Background of the present invention (page 1, lines 15-19). Both Burgess and Elliot teach the winding of dry filaments onto a mandrel, followed by the infusion of the filaments with resin when they are on the mould (or mandrel). For example, on page 2, right hand column, para. [0020] of Burgess it is stated that:

“Once the mast has achieved the required layers of filament – perhaps in the order of twenty layers or so-these filament sets are impregnated with a matrix material which solidifies, and when cured hardens the wound fiber sets into the desired mast shape.”

Clearly, Burgess does not disclose or suggest the application of resin impregnated filaments onto a mandrel.

In order to anticipate a claim, each and every element as set forth in the claim must be described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, the identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that in view of the deficiencies discussed above and at the interview, it is clear that the Burgess reference cited above does not anticipate the present invention. Thus, reconsideration and withdrawal of this rejection are requested.

Issues Under 35 U.S.C. § 103

Claims 3-5, 11 and 13-15 have been rejected under 35 U.S.C. 103(a) as allegedly being obvious over Burgess in view of several combinations of references, including Philpot et al. (US 5,468,329), Hamilton (US 4,130,451), Drachenberg (4,603,084), Brussee (US 3,282,757), Baker et al. (US 3,201,298), Smith (US 4,172,562), McLean

(US 3,378,427), Farris (US 4,432,302), McLain (US 4,089,727), JP 55-128431.

Applicant respectfully disagrees with this rejection

Each of claims 3-5, 11 and 13-15 depend from claim 1, and include the limitations of claim 1. Claim 1 is free from this rejection and is allowable in view of the above discussion.

In an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Nonetheless, claim 1 provides for a method for the application of a resin impregnated filament onto an elongate mandrel, and winding a yarn over the resin impregnated filament. There are significant differences between Burgess, the primary reference, as discussed above. The secondary references fail to remedy the deficiencies of Burgess.

Burgess, and Philpot et al. teach the winding of dry filament onto a mandrel, followed by treating the filaments with resin. Brussee, Baker et al., Smith, McLean, McLain, Hamilton, Drachenberg, Farris, and JP 55-128431 teach the application of resin impregnated filament onto a mandrel or mould. However, there is no teaching or suggestion of stabilizing the impregnated filaments along the length of an elongate mandrel (or mould) using a yarn.

As one of ordinary skill in the art would appreciate, the winding of dry filament is not subject to the same issues as would be found when winding an impregnated filament on to a mandrel. For example, the resin used to impregnate the filament acts as a lubricant and resin impregnated filaments are therefore easily displaced when placed onto

the mandrel, or when wrapped over resin impregnated filaments. Dry filament windings, on the other hand, are generally more stable and less prone to displacement due to the increased friction between the dry filament and the mandrel. The reduced stability of the impregnated filament on a mandrel is more pronounced when these filaments are applied onto elongated mandrels. The use of alignment collars or pins as described in the cited art helps stabilize the filaments over short mandrel lengths, however, they are not effective in stabilizing impregnated filaments on elongate mandrels as is the case in the present invention.

As noted on page 6 of the present application, the method of the present invention can be used for applying impregnated filaments onto elongate mandrels at angles from 90° to 0°. At higher application angles, including circumferential windings, the filaments are generally stable, and such application angles are common within the cited art (e.g. Figure 2 of McLain; Figure 1 of Hamilton; Figure 4 of Smith). As the filament application angle decreases, relative to the mandrel, (i.e. filaments are applied along the length of the elongate mandrel) stability decreases. However, using the method of the present invention, resin impregnated filaments may be applied onto elongate mandrels at angles from 90 to 0°.

Applicant therefore submits that the prior art does not suggest the combination of steps that are defined in claim 1, or dependant claims 3-5, 11 and 13-15. Thus, removal of the rejection to claims 3-5, 11 and 13-15 under 35 USC 103(a) is respectfully requested.

From the foregoing, further and favorable reconsideration in the form of a Notice of Allowability is requested, and such action is believed to be in order.

Should the Examiner believe that anything further is desirable in order to place the application in better condition for allowance, the Examiner is invited to contact the applicant's undersigned attorney at the telephone number listed below.

Petition for an Extension of Time

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants hereby petition for a three-month extension of time for filing a response to the outstanding Office Action. The extension fee in the amount of \$555.00 is filed herewith.

Respectfully submitted,



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